



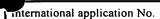
## **PCT**



## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference NSM3422PCT	FOR FURTHER ACTION		ionofTransmittalofInternational Preliminary Report (Form PCT/IPEA/416)				
International application No. PCT/JP99/06174	International filing date (day/n 05 November 1999 (0		Priority date (day/month/year) 10 February 1999 (10.02.99)				
International Patent Classification (IPC) or n C07K 7/64, 14/705, A61K 39/21	national classification and IPC						
Applicant NI	SSUI PHARMACEUTICA	AL CO., LT	D.				
1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.  2. This REPORT consists of a total of4 sheets, including this cover sheet.  This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  These annexes consist of a total of sheets.  3. This report contains indications relating to the following items:  I							
Date of submission of the demand		Date of completion of this report					
21 July 2000 (21.07.00)		26 M	farch 2001 (26.03.2001)				
Name and mailing address of the IPEA/JP	Authori	zed officer					
Facsimile No.	Telepho	ne No.					





PCT/JP99/06174

I.	Basis	of the re	eport
1.	With	regard to	o the elements of the international application:*
	$\boxtimes$	the inte	ernational application as originally filed
		the des	scription:
		pages	, as originally filed
		pages	, filed with the demand
		pages	, filed with the letter of
	$\Box$	the clai	
		pages	as originally flad
		pages	, as amended (together with any statement under Article 19
		pages	, filed with the demand
		pages	, filed with the letter of
	$\overline{}$		
	Ш	the dra	
		pages	, as originally filed
		pages	, filed with the demand
	_	pages	, filed with the letter of
	t	the seque	ence listing part of the description:
		pages	, as originally filed
		pages	, filed with the demand
		pages	, filed with the letter of
2.	the ir	nternation e elemen	to the language, all the elements marked above were available or furnished to this Authority in the language in which nal application was filed, unless otherwise indicated under this item.  Its were available or furnished to this Authority in the following language which is:
	H		guage of a translation furnished for the purposes of international search (under Rule 23.1(b)).
	닏		guage of publication of the international application (under Rule 48.3(b)).
	Ш	the lan or 55.3	nguage of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/3).
3.			to any nucleotide and/or amino acid sequence disclosed in the international application, the international examination was carried out on the basis of the sequence listing:
	$\boxtimes$	contair	ned in the international application in written form.
		filed to	ogether with the international application in computer readable form.
		furnish	ned subsequently to this Authority in written form.
		furnish	ned subsequently to this Authority in computer readable form.
			tatement that the subsequently furnished written sequence listing does not go beyond the disclosure in the ational application as filed has been furnished.
			atement that the information recorded in computer readable form is identical to the written sequence listing has urnished.
4.		The an	nendments have resulted in the cancellation of:
			the description, pages
		$\overline{}$	the claims, Nos.
			the drawings, sheets/fig
5.		This rep	port has been established as if (some of) the amendments had not been made, since they have been considered to go the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**
	in thi	acement s is report 10.17).	sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to t as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16
		,	ent sheet containing such amendments must be referred to under item 1 and annexed to this report.

## **INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

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V.	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
	citations and explanations supporting such statement

. Statement			
Novelty (N)	Claims	1-8	YES
	Claims		NO
Inventive step (IS)	Claims	3, 8	YES
	Claims	1, 2, 4-7	NO NO
Industrial applicability (IA)	Claims	1-8	YES
	Claims		NO

## 2. Citations and explanations

Document 1: EP, 834564, A2 (SmithKline Beecham Corporation), 8 April 1998 (08.04.98) &

JP, 10-179180, A

Document 2: Anne Brelot et al., "Role of the first and third extracellular domains of CXCR-4 in human immunodeficiency virus coreceptor activity", Journal of Virology (1997),

Vol. 71, No. 6, pp. 4744-4751

Document 3: EP, 551689, A2 (Merck & Co., Inc.), 21

(July 1993 (21.07.93) & JP, 5-170797, A) doe't ted dodrograptid dead!

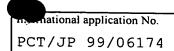
Claims 1, 2 and 4-7

Document 1 discloses the gene sequence of human chemokine receptor CC-CKR5, known to be a principal cofactor in the invasion of HIV-1 into cells, and also the amino acid sequence and gene sequence of the murine chemokine receptor, and indicates that CC-CKR5 polypeptide can be used as an immunogen for producing antibodies against said receptor and that said antibodies can be used to inhibit HIV-1 infection.

Document 2 discloses neutralization of HIV-1 infection by an antibody against the extracellular domain of chemokine receptor CXCR-4.

Document 3 discloses cyclic human immunodeficiency





virus principal neutralizing determinant peptides, and indicates that ligands including cyclic peptides are useful in enhancing antipeptide, anti-HIV or HIV-neutralizing immune reactions.

Knowing that antibodies to the receptors inhibits HIV-1 infection, as disclosed in Documents 1 and 2 a person skilled in the art could easily select partial CC-CKR5 or CXCR-4 polypeptides as cyclic peptides in order to provoke an efficient neutralizing reaction as disclosed in Document 3, in order to produce a vaccine to produce neutralizing antibodies against HIV-1.

In addition, the position of the polypeptide can be appropriately selected from the extracellular domain.

Therefore, the invention as described in Claims 1, 2 and 4-7 could be derived easily by a person skilled in the art from Documents 1-3.